Key to diagrams

Figure 1A

Static delay

τ is constant

Original value

Interpolated intermediate value

Figure 1B

Dynamic delay

τ increases

Figure 1C

Dynamic delay

τ decreases

Figure 2

Enable

Marking

Read & write control

Marking

Read control

Polyphase filter

Figure 3

[please refer to Figure 2]

Figure 4

Figure 5

Figure 6

Figure 7

S100

Normal operation

- adjust write pointer
- adjust read pointer

S101

Lower range limit reached (0 ns)?

Yes No

S104

Request additional value

- input value – REG
- do not adjust write pointer
- adjust read pointer

S102

Over-range?

Yes No

(10ns → 0.5ns)

S105

Mark next value

- adjust write pointer
- adjust read pointer
- mark input value

S103

Use same values

- adjust write pointer
- do not adjust read pointer
- deactivate slide register of the HBF and the PPF

S106

Normal operation
- adjust write pointer
- adjust read pointer

S107

Marking received?

No Yes

S108

Additional value received
- adjust write pointer
- adjust read pointer
- REG → second position in the upper branch of the PPF
- change polyphase to 10ns

Figure 8

Original value

Intermediate value produced by HBF

Original value

Interpolatable intermediate values through polyphase filter

Range 2

Interpolatable intermediate values through polyphase filter

Range 1